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EXAMINER

PHAN, RAYMOND NGAN

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/669,034

Applicant(s)

SUBRAMANIYAM ET AL.

Examiner

Raymond Phan

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

### **Part III DETAILED ACTION**

#### ***Notice to Applicant(s)***

1. This application has been examined. Claims 1-23 are pending.
2. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2181.

#### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-3, 8, 8-23, are rejected under 35 U.S.C. § 102(e) as being anticipated by Hetherington et al. (US No. 5,978,864).

In regard to claims 1, 8, Hetherington et al. disclose a method and system comprising a CPU, wherein the CPU includes power management logic that enables the CPU to operate in a first execution mode whenever the temperature of the CPU exceeds the predetermined threshold and operates in a second execution mode whenever the temperature of the CPU is below the predetermined threshold (see col. 14, lines 5-32).

In regard to claims 2, 15, Hetherington et al. disclose wherein the power management logic comprising a thermal sensor 220 (see col. 13, lines 44-54); and an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature of the CPU exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold (see col. 14, lines 5-32). The teaching of digital filter is explicitly known to the teaching of Hetherington et al.

In regard to claim 3, the teaching of an analog to digital converter coupled between the thermal sensor and the digital filter is explicitly known to the teaching of Hetherington et al.

In regard to claims 9, 17, 21, Hetherington et al. disclose wherein the power management logic further comprises an instruction execution unit coupled to the interrupt handler; and an artificial activity generator coupled to the interrupt handler (see col. 14, lines 32-67).

In regard to claims 10, 19, 23, Hetherington et al. disclose wherein the artificial activity generator causes the CPU artificial activity generator to suspend

artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature (see col. 14, lines 5-22).

In regard to claims 11-14, 18, 22, Hetherington et al. disclose wherein the instruction execution unit causes the CPU to operate in a full dispersal mode whenever the die temperature is below the predetermined threshold temperature and operates in a single dispersal mode whenever the temperature of the CPU is above the predetermined threshold temperature (see col. 14, lines 47-67).

In regard to claims 16, 20, Hetherington et al. disclose wherein the power management logic comprising a thermal sensor 220 (see col. 13, lines 44-54); and an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature of the CPU exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold (see col. 14, lines 5-32). The teaching of digital filter is explicitly known to the teaching of Hetherington et al. The teaching of an analog to digital converter coupled between the thermal sensor and the digital filter is explicitly known to the teaching of Hetherington et al.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hetherington et al. in view of McFarland et al. (US No. 5,125,093)

In regard to claim 4, Hetherington et al. teach the claimed subject matter as discussed above except the teaching of PAL wherein the PAL includes an interrupt handler for receiving the first and second interrupt. However McFarland et al. disclose the PAL wherein the PAL includes an interrupt handler for receiving interrupts (see col. 8, lines 38-56). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of McFarland et al. within the system of Hetherington et al. because it would provide a technique that efficiently allocates the servicing of interrupts among a plurality of CPUs.

In regard to claim 5, Hetherington et al. disclose wherein the power management logic further comprises an instruction execution unit coupled to the interrupt handler; and an artificial activity generator coupled to the interrupt handler (see col. 14, lines 32-67).

In regard to claim 6, Hetherington et al. disclose wherein the instruction execution unit causes the CPU to operate in a full dispersal mode whenever the die temperature is below the predetermined threshold temperature and operates in a single dispersal mode whenever the temperature of the CPU is above the predetermined threshold temperature (see col. 14, lines 47-67).

In regard to claims 7, Hetherington et al. disclose wherein the artificial activity generator causes the CPU artificial activity generator to suspend artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature (see col. 14, lines 5-22).

***Conclusion***

8. All claims are rejected.
9. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

**Bailey et al. (US No. 5,451,892)** disclose a clock control technique and system for a microprocessor including a thermal sensor.

**Pippin (US No. 5,838,578)** discloses a method and apparatus for programmable thermal sensor for an integrated circuit.

**Ikeda et al. (EPO No. 0 566 395 A1)** disclose a drive control system for microprocessor with conditional power saving.

**Herbert et al. (EPO No. 0 683 558 A1)** disclose a method and apparatus for reducing power dissipation in an electronic device.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (703) 306-2756. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (703) 305-9656 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 746-7239.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

**Raymond Phan**  
4/9/03

*RP*

*Paul R. Myers*

PAUL R. MYERS  
PRIMARY EXAMINER